



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2018-0114; Product Identifier 2017-NM-167-AD; Amendment 39-19335; AD 2018-15-03]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for The Boeing Company Model 787 series airplanes powered by Rolls Royce Trent 1000 engines. This AD was prompted by a report of failures of the inner fixed structure (IFS) forward upper fire seal and damage to thermal insulation blankets in the forward upper area of the thrust reverser (TR). This AD requires an inspection to determine the part number of the IFS forward upper fire seal, and applicable on-condition actions. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For service information identified in this final rule, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced

service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0114.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0114; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the regulatory evaluation, any comments received, and other information. The address for Docket Operations (phone: 800-647-5527) is Docket Operations, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA; phone: 206-231-3553; email: Takahisa.Kobayashi@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to The Boeing Company Model 787 series airplanes powered by Rolls Royce Trent 1000 engines. The NPRM published in the Federal Register on February 23, 2018 (83 FR 8017). The NPRM was prompted by reports of failures of the IFS forward upper fire seal and damage to thermal insulation blankets in the forward upper area of the TR. The NPRM proposed to require an inspection to determine the part number of the IFS forward upper fire seal, and applicable on-condition actions.

We are issuing this AD to prevent failure of the IFS forward upper fire seal, which causes the loss of seal pressurization and allows fan bypass air to enter the engine core compartment. Fan bypass air entering the engine core compartment could degrade the ability to detect and extinguish an engine fire, resulting in an uncontrolled fire. Furthermore, fan bypass air entering the engine core compartment could cause damage to the TR insulation blanket, resulting in thermal damage to the TR inner wall, the subsequent release of engine exhaust components, and consequent damage to critical areas of the airplane.

Comments

We gave the public the opportunity to participate in developing this final rule. The following presents the comments received on the NPRM and the FAA's response to each comment.

Support for the NPRM

Boeing supported the intent of the NPRM.

Request to Include Additional Action

An anonymous commenter requested that an additional action be included in the proposed AD. The commenter proposed that Boeing develop an inspection of the thermal blankets and fire seals to ensure the integrity and safe operation of these components. The commenter expressed concern that a thermal blanket could fail due to insufficient sealing by the fire seals that have incorporated the modification mandated by this AD. The modification of the fire seals is specified in Boeing Alert Service Bulletin B787-81205-SB780033-00, Issue 001, dated November 1, 2017 ("BASB B787-81205-SB780033-00, Issue 001").

The commenter stated that the post-modification fire seals are still failing. The commenter is aware of 30 findings of fire seal/thermal blanket damage across a fleet size of 16 airplanes. The commenter noted that there were 18 findings prior to incorporation

of the modification of the fire seals specified in BASB B787-81205-SB780033-00, Issue 001, and 12 findings after incorporation of that modification. The commenter is concerned that the unsafe condition addressed by this AD could still exist after accomplishment of the mandatory modification.

We do not agree with the commenter's request. We do not want to delay the publication of this AD by adding a new inspection requirement that will require additional time for public comment. We have determined that the modification of the fire seals required by this AD addresses the design issue of the fire seal end cap that resulted in failure of the IFS forward upper fire seal and damage to the thermal blanket. We are aware of operator reports that damage to the IFS forward upper fire seal and thermal blanket has been discovered on airplanes on which the modification specified in BASB B787-81205-SB780033-00, Issue 001, has been done. The airplane manufacturer is investigating the root cause of this damage and, when the root cause is identified, we may consider further rulemaking at that time. We have not changed this AD in this regard.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this final rule as proposed, except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Related Service Information under 1 CFR part 51

Boeing has issued Boeing Alert Service Bulletin B787-81205-SB780033-00, Issue 001, dated November 1, 2017. This service information describes procedures for an

inspection to determine the part number of the IFS forward upper fire seal and applicable on-condition actions. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 13 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

Estimated costs for required actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	8 work-hours X \$85 per hour = \$680	\$0	\$680	\$8,840

We estimate the following costs to do any necessary on-condition actions that will be required. We have no way of determining the number of aircraft that might need these on-condition actions:

Estimated costs of on-condition actions

Labor cost	Parts cost	Cost per product
8 work-hours X \$85 per hour = \$680 (fire seal replacement, 4 per airplane)	\$4,532	\$5,212

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: “General requirements.” Under that section, Congress

charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes and associated appliances to the Director of the System Oversight Division.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2018-15-03 The Boeing Company: Amendment 39-19335; Docket No. FAA-2018-0114; Product Identifier 2017-NM-167-AD.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to The Boeing Company Model 787 series airplanes, certificated in any category, powered by Rolls Royce Trent 1000 engines.

(d) Subject

Air Transport Association (ATA) of America Code 78, Engine Exhaust System.

(e) Unsafe Condition

This AD was prompted by reports of failures of the inner fixed structure (IFS) forward upper fire seal and damage to thermal insulation blankets in the forward upper area of the thrust reverser (TR). We are issuing this AD to prevent failure of the IFS forward upper fire seal, which causes the loss of seal pressurization and allows fan

bypass air to enter the engine core compartment. Fan bypass air entering the engine core compartment could degrade the ability to detect and extinguish an engine fire, resulting in an uncontrolled fire. Furthermore, fan bypass air entering the engine core compartment could cause damage to the TR insulation blanket, resulting in thermal damage to the TR inner wall, the subsequent release of engine exhaust components, and consequent damage to critical areas of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

For Model 787-8 and 787-9 series airplanes identified in Boeing Alert Service Bulletin B787-81205-SB780033-00, Issue 001, dated November 1, 2017 (“BASB B787-81205-SB780033-00, Issue 001”): Within 36 months after the effective date of this AD, do all applicable actions identified as “RC” (required for compliance) in, and in accordance with, the Accomplishment Instructions of BASB B787-81205-SB780033-00, Issue 001.

(h) Parts Installation Prohibition

For Model 787 series airplanes powered by Rolls Royce Trent 1000 engines, as of the effective date of this AD, no person may install a thrust reverser with an IFS forward upper fire seal having part number (P/N) 725Z3171-127 or P/N 725Z3171-128.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in

paragraph (j) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) For service information that contains steps that are labeled as RC, the provisions of paragraphs (i)(4)(i) and (i)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled “RC Exempt,” then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator’s maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(j) Related Information

For more information about this AD, contact Tak Kobayashi, Aerospace Engineer, Propulsion Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone: 206-231-3553; email: Takahisa.Kobayashi@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Boeing Alert Service Bulletin B787-81205-SB780033-00, Issue 001, dated November 1, 2017.

(ii) Reserved.

(3) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110 SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>.

(4) You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:
<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Des Moines, Washington, on July 13, 2018.

Michael Kaszycki,
Acting Director,
System Oversight Division,
Aircraft Certification Service.
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